BASIC KNOWLEDGE IN MARINE SCIENCES

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Introduction

Coral reefs are unique ecosystem due to the high-diversity and high-productivity marine communities that found in the areas of warm (> 20 °C) and clear water, often in shallow water to a depth of about 60 meters (Richmond, 1993). Coral reefs can form in a limited depth to get the sunlight penetration for the vital photosynthesis process. Coral reefs develope in water which contains minimal amounts of plankton because corals need clear water to get enough sunlight for photosynthesis. High productivity of coral reefs has a symbiotic relationship between the coral polyps and photosynthetic zooxanthellae in which the zooxanthellae provides the corals with nutrients essential for reef building and oxygen produced by photosynthesis. The coral colonies also provide shelter for a great number of resident organisms (Karleskint, 1998). About 30% to 40% of all fish species on Earth are found in coral reefs (Stiling, 1999).

In addition, coral reefs can give a lot of economic and socio-economic values such as in fisheries, tourists drawing, recreational opportunities and natural products diversity especially in biomedical products. Coral reefs can also form islands and protect the shoreline by buffering waves which may cause coastal erosion (Richmond, 1993). People depend on coral reefs for part of their livelihood and protein in their diet (Steven, 1994). However, the importance of coral reefs in the economic and socio-economic values can stress and cause the degradation of coral reefs because organisms which dwell in coral reefs are usually very sensitive to environmental conditions.